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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/014,974      | 12/11/2001  | Ming-Chang Liu       | 80398.P467          | 6368             |

7590 10/22/2004

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EXAMINER

SENF, BEHROOZ M

ART UNIT PAPER NUMBER

2613

DATE MAILED: 10/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                   |  |
|------------------------------|--------------------------------------|-----------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/014,974 | <b>Applicant(s)</b><br>LIU ET AL. |  |
|                              | <b>Examiner</b><br>Behrooz Senfi     | <b>Art Unit</b><br>2613           |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,8-13,18 and 19 is/are rejected.
- 7) ☒ Claim(s) 4-7,14-17 and 20-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 – 3 and 18, are rejected under 35 U.S.C. 102(e) as being anticipated by Smolenski (US 6,058,140).

Regarding claims 1, Smolenski '140 discloses "a method for identifying Repeated fields in a video sequence" (i.e. fig. 7, abstract), and "determining the first set and second set of motion vectors from input video frames" (figs. 4a – 4b and fig. 7, motion compensation unit), and "identifying a repeated field by comparing the motion vectors to a threshold" (i.e. fig. 6, 605, col. 4, lines 1 – 18 and lines 40 – 51).

Regarding claims 2 – 3, Smolenski '140 discloses "first set of motion vectors is between a first field of a first frame and a first field of the second frame and the second set of motion vectors is between a second field of the first frame and a second field of a second frame" (video frames comprises of two video fields, and the motion vectors are between the video fields, of the first field of the first frame and the first field of the second frame and so on, col. 3, lines 7+, col. 4, lines 20 - 33).

Regarding claim 18, the limitations claimed are substantially similar to claim 1, and are computer implemented process of claim 1, therefore the ground for rejecting claim 1 also applies here. Since 3:2 pull-down process illustrated in fig. 7, is computer implemented and the software or programs to carry out the instructions would have been necessitated by the system.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8 – 10, 11 – 13 and 19, are rejected under 35 U.S.C. 103(a) as being unpatentable over Smolenski '140 in view of Rao et al (US 6,041,142).

Regarding claim 9, Smolenski '140 teaches, "identifying repeated fields in a video Sequence and determining set of motion vectors from input video frames" as discussed above in, claim 1. Smolenski '140 fails to explicitly teach "replacing the repeated field with a reference to a field from which the repeated field is repeated". However, such features are well known and used in the prior art of the record as evidenced by Rao '142 (i.e. abstract, lines 20 – 23, col. 7, lines 8 – 12) wherein teaches replacing the repeated field as claimed. Taking the combined teaching of Smolenski '140 and Rao '142 as a whole, it would have been obvious to one skilled in the art at the time of the invention was made to drop the repeated field and replace that with identical fields

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(reference field) as taught by Rao , which would improve the encoding efficiency of the video data stream (col. 7, lines 10 – 12 of Rao).

Regarding claims 8 and 10, combination of Smolenski '140 and Rao '142 teach, "first threshold is a heuristically determined value" (i.e. figs. 8b – 8c, col. 8, lines 1 – 11), and "averaging the repeated field" (i.e. col. 64, lines 61 – 66).

Regarding claim 11, combination of Smolenski '140 and Rao '142 teach, "receiving input video frame" (i.e. fig. 7, input video data), and "determining the first set and second set of motion vectors from input video frames" (figs. 4a – 4b and fig. 7, motion compensation unit), and "comparing the ratio of the motion vectors with threshold" reads on (i.e. col. 23, lines 53 – col. 24, lines 1 of Rao).

Regarding claims 12 – 13 and 19, the limitations claimed are substantially similar to claims 9 – 10, therefore the grounds for rejecting claims 9 – 10 also applies here.

#### ***Allowable Subject Matter***

5. Claims 4 – 7, 14 – 17 and 20 – 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(703)305-0132**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Chris Kelley** can be reached on **(703)305-4856**.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**Or faxed to:**


**(703) 872-9314**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

B. S. R. S.

10/16/2004

  
CHRIS KELLEY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600